

Serial No. 09/655,367
HP Ref. 30990128-03
Docket No. 1509-127
Page 9

REMARKS

Applicants thank the Examiner for the thorough consideration given the present application.

Claims 1, 2, 5, 8, and 13 are pending, of which claims 1, 8, and 13 are independent. The remaining claims are cancelled without prejudice or disclaimer, Applicants reserving the right to file one or more continuing applications directed to the subject matter of these claims if later desired.

The foregoing amendments obviate the rejections under 35 U.S.C. §101 and §112, second paragraph.

Insofar as they may relate to the pending claims, Applicants traverse the rejections under 35 U.S.C. §103(a) of claims 1, 8, and 11 as being unpatentable over the Aline et al. article in view of Chang et al. (U.S. 6,134,584), claims 3 and 12 as being unpatentable over Aline et al. in view of Chang et al. and the Fielding et al. article., and the rejection of claims 4, 5, and 9 as being unpatentable over Aline in view of Chang and Beall (U.S. 6,169,992).

While not acquiescing to any rejection, but merely to advance prosecution of the present application, independent claim 1 is amended to recite a method of a method of communication between a service external to a network firewall and a client internal to the firewall having a combination of steps, including (a) effecting an

Serial No. 09/655,367
HP Ref. 30990128-03
Docket No. 1509-127
Page 10

HTTP request from the client to the service, and the request being a request for data and including a request identifier; (b) in response to the request for data, establishing at the service a communications socket for communicating the requested data between the service and the client and recording an association between the request identifier and the socket; and (c) after a predetermined time interval, effecting a further HTTP request from the client to the service, the further HTTP request including the request identifier; (d) in response to the further HTTP request, closing the communications socket indicated in the association at the service, opening a new communications socket at the service for communicating data between the service and the client, and updating the association to associate the new communications socket with the request identifier; and (e) repeating steps (c) and (d) until the request for data has been satisfied, the service providing the requested data to the client via the communications socket currently associated with the request identifier by the association.

Independent claim 8 recites an apparatus for communicating with a service via a proxy server arranged to force, after a specific time interval, termination of a communications socket through which communication between the apparatus and the service takes place, the apparatus having a combination of elements,

Serial No. 09/655,367
HP Ref. 30990128-03
Docket No. 1509-127
Page 11

including a communications interface for interfacing the apparatus with a network; a first control arrangement for using the communications interface to effect a first HTTP GET operation with respect to the service, thereby to cause the latter to establish a communications socket for communicating data between the service and the client, the GET operation being arranged to pass a globally unique identifier to the service; a second control arrangement for using the communications interface to repeatedly effect another GET operation sending the globally unique identifier to the service for a predetermined time interval, less than the specific time interval, after a most recent GET operation effected by the apparatus with respect to the service, thereby to cause the service to close the existing communications socket and to open a new communications socket for communicating data between the service and the client; and a third control arrangement for causing the second control arrangement to terminate its operation when access between the service and the client is no longer required.

Added independent claim 13 recites a server comprising having a combination of elements, including a communications interface for receiving HTTP requests from a client; a first control arrangement arranged to identify HTTP requests of a first type and of a second type where each of these request types includes a globally-unique identifier and each request of said first type is

Serial No. 09/655,367
HP Ref. 30990128-03
Docket No. 1509-127
Page 12

a request for data; a second control arrangement arranged to respond to an HTTP request of said first type by establishing a communications socket at the server for communicating the requested data between the server and the client, and by recording an association between the identifier included in the HTTP request and the communications socket; a third control arrangement arranged to respond to an HTTP request of said second type to close the communications socket indicated by the said association recorded in respect of the identifier included in the HTTP request, the third control arrangement being further arranged to open a new communications socket at the server for communicating data between the server and the client, and to update said association to associate said identifier with the new communications socket; and a fourth control arrangement arranged to respond to the request for data included in an HTTP request of said first type by providing the requested data to the client via the communications socket currently associated with the identifier in the HTTP request by the corresponding said association.

None of the cited references, including Aline et al., Chang et al., and Fielding et al., discloses or suggests a method, apparatus, or server having the above-noted steps and features. One of ordinary skill in the art would not have been motivated to combine Aline et al. and Chang et al. to arrive at the steps of

Serial No. 09/655,367
HP Ref. 30990128-03
Docket No. 1509-127
Page 13

claims 1, 2, and 5; the apparatus of claim 8; or the server of claim 13.

Counsel for Applicants notes that the technical explanation provided in the previous Office Action may require clarification regarding the opening and closing of sockets at the client. An aspect of amended claim 1 is sending HTTP requests from the client to the service to force the service to close one socket and to open another, both sockets being associated with an identifier sent by the client.

The client periodically triggers the service to close one socket and open another while keeping track of the currently-open socket to be used for supplying requested data to the client; in this manner, any interposed proxy server does not have an opportunity to interrupt communication by timing out a connection between the client and service.

In Aline, the server closes its socket after the server has responded to a current transaction. See paragraph 1 on page 2. The server does not thereafter open another socket associated with the same request identifier as is done by the claimed operations. In Aline, each transaction is separate.

Chang discloses closing an Internet connection after a predetermined time. If there is a transfer operation still on-going at this time, the transfer is rescheduled for a later time.

Serial No. 09/655,367
HP Ref. 30990128-03
Docket No. 1509-127
Page 14

At column 7, lines 58-65, Chang discusses the possibility of sending a cancellation message from the "initiating machine" to the "destination machine." However, this is not stated as occurring at the time the connection is closed. In any event, Chang does not disclose or suggest sending a second GET message to close one socket and open another.

Aline and Chang also fail to disclose or suggest the features of Applicants' independent claims 8 and 13, and the secondary references fail to cure the deficiencies of Aline and Chang.

Applicants' client-apparatus claim 8 is concerned with the functionality at the client and, in particular, with the means for periodically sending further HTTP requests to trigger the service to close one socket and open another. These HTTP requests must include a common identifier to enable the service to associate the requests with the already-open socket at the service.

Applicants' server claim 13 is concerned with the functionality at the server and, in particular, with the means that distinguishes the initial HTTP request (requests of "a first type") that are the actual data requests, and subsequent HTTP requests (requests of "a second type") that are intended to trigger the server to close one socket and open another.

In view of the foregoing amendments and remarks, favorable reconsideration and allowance are deemed in order.

Serial No. 09/655,367
HP Ref. 30990128-03
Docket No. 1509-127
Page 15

To the extent necessary during prosecution, Applicants hereby request any required extension of time not otherwise requested and hereby authorize the Commissioner to charge any required fees not otherwise provided for, including application processing, extension of time, and extra claims fees, to Deposit Account No. 08-2025.

Respectfully submitted,
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